Harnessing Data for Enhanced Program Oversight: The Smart Supervision App

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SUMMARY

Financial and managerial oversight of World Bank investment projects is a continuous process consisting of both on-site visits and off-site work. This requires considerable time and resources. Current Bank systems do not provide a mechanism to identify project risks in near real time, to closely track physical project implementation or to capture geo-referential data to permit the mapping of projects and sub-projects on the ground. To help improve program supervision and increase understanding of reach and impact, the World Bank is creating a Smart Supervision App (SSA), allowing fiduciary and program teams, external auditors, beneficiaries and citizens to capture, report and analyze real-time project information. The development team has built an enhanced mobile application through which users can upload project information and documentation, enabling swift, informed decision-making and shorter response times.

The SSA will enable entry of imaging and geo-referencing data, allowing real-time synchronization when online, and storing data when offline for automatic synchronization when reconnected. The data will be aggregated in a big-data infrastructure which will be connected to the World Bank’s Financial Management Portfolio and Risk Management System (PRIMA) and Procurement Risk Assessment Management System (PRAMS). It will feed information into both systems, where smart dashboards will offer wide scope for analysis of financial management and procurement information, at project, country and sector levels. Linked to the Agile Unified Operations Tool initiative, the SSA will contribute to a common platform for planning, coordinating, monitoring and
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**CHALLENGE**

The World Bank currently allocates significant time and resources to supporting and supervising implementation of investment project financing provided to clients. With increasingly complex and rapidly evolving operating environments, it can be difficult to ensure that the right people have the right information at the right time to inform appropriate risk management, resource allocation and support during project implementation. High-quality project data is needed to enable risk identification in near real time and ensure appropriate responses. These are critical for effective implementation of development programs and for accountability in the use of development resources.

The Bank’s fiduciary specialists currently carry out desk analysis and field visits to assess project progress and identify areas of risk. The analysis involves the specialists reviewing a project’s financial management and procurement execution reports, before writing a report detailing risk and project performance. Accessing data buried within these reports for analysis can be challenging, requiring cumbersome cut-and-paste processes. The specialists’ reports are then submitted to managers via the World Bank’s corporate systems (such as PRIMA and PRAMS).

Given that many projects the Bank finances have multiple sub-projects, it is a challenge to track in detail funds allocated to remote areas. Clients are responsible for hiring auditors, who tend to check the nearest and easiest sub-projects, rather than those where risk may be highest. The Bank also faces challenges in measuring detailed impact, such as how many families, women, indigenous people or minorities are reached. As well as affecting individual project monitoring and management, this prevents meta-analysis of the Bank’s impact in a geographical or subject area.

In contrast, reliable real-time project information would enable swift, informed decision-making, shorter response times, and better understanding of projects’ environmental and social impacts. To provide such information, the World Bank needs a data-driven tool allowing the capture of timely information, flagging of implementation issues, reduced response times, improved resource allocation and identification of emerging risks. In response, the Bank formed a cross-functional team – including members from Standards, Procurement and Financial Management, the Governance Global Practice and Project Implementation – to create a digital tool that would enable users to capture, report and analyze real-time project information.

**INNOVATION**

The Smart Supervision App (SSA) is a mobile application enabling users to enter and analyze imaging and geo-referencing data, to provide real-time insight into project progress.

When connected with the World Bank’s back-end systems through webservices and Application Program Interfaces (APIs), it will be able to pre-fill financial management and procurement reports with project data and automate the production of Bank documents (such as financial management and procurement assessments). This will strengthen fiduciary.
oversight, particularly in remote areas or high-risk contexts of fragility, conflict and violence (FCV).

To enable assessment of sub-projects in remote locations, the app works both on- and offline, using mobile devices for geo-referencing and to allow audio, video and image capture. Data is synchronized in real time when online, and stored when offline for automatic synchronization when internet reconnection is resumed. The data will be aggregated in a big-data infrastructure, enabling enhanced reporting, analysis and interactive visualizations for proactive management of portfolio development. Smart dashboards will offer users visualizations, reports and analytics, with wide scope for analysis across projects or at project and sub-project levels in fields such as financial management, procurement, risk ratings and social impact.

The SSA offers role-secured access, on “read-only” or “modify” bases. With pre-populated fields, the application will save time and enable better quality reporting and greater standardization of supervision. Program implementation staff will update the project status and sub-project geo-references, financial information, implementation and progress (including images from civil works and services delivered).

**External and strategic benefits**

External auditors will be able to use the app to collect and record evidence from field visits to track sub-project implementation and progress, such as asset status and geo-references, highlighting any issues. Donors can track use of funds confidentially, including through receipts and bank statements, while a public version of the app will enable civil society and community oversight of how public resources are used, via a single entry point enabling data input but allowing read-only access to Bank data. This on-the-ground insight and feedback will reduce the time and effort needed for fiduciary project supervision, freeing the World Bank’s financial specialists to dedicate more time to advising team members and clients on public financial management.

At a macro level, SSA will provide inputs to the Bank’s Agile Logbook as part of the portfolio dashboard, enabling Task Team Leaders to see information from all project specialists on one platform. This will enhance risk monitoring and analysis of emerging trends, as well as enabling identification by Country Management Units of systemic national issues, and of sectoral issues by Global Practices. Such integration will enable the app to contribute significantly to a common system for planning, coordinating, monitoring, accounting and auditing World Bank operations. Big data from the app will also be analyzed to generate insight into risk across different portfolios, to uncover patterns in clients’ behavior and wider trends, and inform World Bank strategy. Once the SSA is integrated into the unified platform, a final step will involve enabling machine-reading of project documents (such as audit reports and interim financial statements) to augment intelligence. At this stage, the integrated platform will, like the SSA, allow external access enabling clients, project beneficiaries, third-party monitors and other stakeholders to report specific issues.

**RESULTS**

The SSA application is currently undergoing testing during a pilot in Brazil’s Pernambuco state, linked to the World Bank’s “ProRural”
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project to promote sustainable rural development by supporting family producers and social infrastructure development. The project has 738 sub-projects, many involving cash transfers to remote communities which number too many for financial management and procurement specialists to visit individually. Instead, project teams have been trained in how to use the tool to speed up report generation by submitting details and uploading documentation via the app. By clicking on a community mapped on the interface, users can see details of sub-project execution via elements such as images, procurement documents and financial information. Visualizations enable project analysis, including number of contracts and amounts disbursed, so World Bank users can identify which projects entail fiduciary risk and require visiting in person. This saves financial management and audit staff much time, while greatly increasing accountability for use of funds across all sub-projects. Pernambuco’s state government has publicly recognized the SSA as an asset and committed to using it in other contexts, enabling the app to promote quality development outcomes beyond the ProRural project cycle.

With feedback from these pilot users, the team will continue to develop and refine the concept, before deploying the SSA widely to all financial management and procurement groups. The results so far confirm the app’s potential. A subsequent pilot is being planned for a fragile context, too unstable for outside parties to visit, via collaboration with the Geo-Enabling Initiative for Monitoring and Supervision (GEMS). By supplying the app to project implementation staff, UN employees and third-party monitors, the Bank will gain access to comprehensive information from multiple sources. A pilot is also under development with the Bank’s virtual reality team to develop 360-degree imagery. Future steps will aim to build data gathered through the Internet of Things (IoT) into the app and to design features to connect with World Bank machine-reading tools.

LESSONS LEARNED

The Smart Supervision App shows the potential for data analytics to streamline World Bank operations and inform strategy – provided input data is high-quality and Bank-wide systems are connected.

• **Seek synergies across World Bank units and operations**
  To maximize the impact of big data analytics, it is important to locate and create synergies across Bank operations. The SSA is designed to connect with and share data across different teams, to avoid duplication and open up opportunities.

• **Ensure complete connectivity across World Bank systems**
  Tools such as the SSA must be able to connect to wider World Bank systems, both to access documentation needed by financial managers and procurement specialists, and to inform analysis and strategy at country, regional and sectoral levels.

• **Harness project-level big data to drive World Bank strategy**
  The SSA shows the potential for big data analytics to draw on project-level information to uncover patterns and trends in clients’ behaviour that can inform the Bank’s macro-level strategy.
• **Use World Bank big data analytics to benefit external actors**

By harnessing big data for its own operations, the Bank can empower actors who share its goals, such as CSOs, NGOs and businesses. The public version of the SSA will allow third parties to report information and gain data-based insights, increasing the impact of sustainable development initiatives.

The Smart Supervision App is being piloted through the World bank’s ProRural project in Brazil, where it is helping users manage and monitor 738 sub-projects, many too remote for auditors to visit in person.

Geo-tagged images and video from remote sub-projects can be uploaded via app in real-time or, in the absence of an Internet connection, stored for automatic synchronization once connectivity is resumed.
The Smart Supervision App will offer users integration of operational data from different project disciplines, such as financial management and procurement, and visualization of data analytics.